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cause it exhibits such a close correspondence of its mature characters with the structure of the embryonic Lycopodium.

CULTIVATED VERBASCUMS have always been favorite plants for hybridizing. Dr. Victor Schiffner¹¹ has given us an interesting account of these hybrids in general, and then describes minutely some new hybrids from *V. pyramdatum* which were discovered in the summer of 1885 in the Botanical Gardens at Prague. They were growing spontaneously, and were of sufficient interest to justify a careful comparison of their characters with those of their parents. The hybrids studied resulted from the crossing of *V. pyramdatum* with *V. nigrum*, *V. phœnicum*, and two different combinations with *V. phlomoides*.

NOTES AND NEWS.

DR. J. T. I. BOSWELL, the well known English botanist, died January 31st.

A BILL to establish an experimental grass and forage station has been brought before congress by Senator Platt.

CENTURIES XX and XXI of Ellis' North American Fungi will be issued early in the spring—probably in March or April.

A REVISED EDITION of Underwood's "Ferns and Their Allies" will be issued shortly from the press of Henry Holt & Co., New York.

DR. ED. PALMER has just returned from Mexico. His collection of plants, some 600 species, is on the way, and doubtless contains many new things.

THE APPEARANCE of the new journal, *Garden and Forest*, has been delayed by the serious illness of Professor Charles S. Sargent, the editor in charge.

THE *Index Seminum*, the catalogue of seeds for exchange at the Jardin des Plantes, has just been received. It contains 18 quarto pages, 4 columns to a page.

THE REGENCY of the Smithsonian Institution, made vacant by the death of Dr. Gray, has been tendered by the U. S. Senate to Prof. Andrew D. White, ex-president of Cornell University.

THE *Journal of Botany* for February contains descriptions of 4 new ferns and 13 new Tillandsias. Dr. Baker, in his synopsis of the Tillandsiæ, has reached the 165th species of Tillandsia.

MR. A. P. MORGAN continues his contributions on the "Mycologic flora of the Miami Valley, Ohio," in the *Journ. Cin. Soc. Nat. Hist.* for January. The paper includes the order Thelephorei under Hymenomycetes.

¹¹ SCHIFFNER, DR. VICTOR.—Ueber Verbascum-Hybriden und einige neue Bastarde des Verbascum pyramdatum M. B. (Bibliotheca botanica, heft 3.) 15 pp., 2 plates, 4°. Cassel: Theodor Fischer, 1887.—4 marks.

THE FORESTRY CONVENTION held at Grand Rapids, Mich., January 27 and 28, was a profitable gathering. Dr. W. J. Beal presided, and B. E. Fernow, of Washington, C. W. Garfield and other well-known speakers were present.

AS THE possible successor of Professor Dickson at Edinburgh University several well known botanists are mentioned, among whom are Professor Bayley Balfour, Mr. Geddes, Mr. G. Murray, Professor McNab and Professor Traill.

THE *Italian Journal of Botany* bearing date of January 31 is principally occupied by a monograph of the genera *Pleospora*, *Clathrospora* and *Pyrenophora*, by A. N. Berlese. O. Beccari also describes some new palms from New Guinea.

THE REPORT of the New York Agricultural Experiment Station for the year 1887, recently distributed, contains items of botanical interest by several of the corps of investigators. The chief topics relate to fungous diseases of plants and fungicides.

DR. L. G. YATES, of Santa Barbara, California, announces a volume entitled "All known ferns." It is to be an octavo of about 300 pages, and will really be a complete index to fern literature. In its preparation the author is assisted by Dr. J. G. Baker, of Kew.

ANENT THE recent discussion on the nomenclature of our water lilies, it is to be noted that Dr. R. Caspary, in elaborating the order *Nymphaeaceæ* for Engler and Prantl's *Pflanzenfamilien*, retains the genera *Nymphaea* and *Nuphar* unchanged and alters *Nelumbium* to *Nelumbo*.

PROFESSOR JOSEPH SCHRENK has published (with plate), in the *Bulletin of the Torrey Botanical Club*, (February), his very important paper, "On the histology of the vegetative organs of *Brasenia peltata*," read at the New York meeting of the A. A. S. last August. It is an exhaustive study of a very interesting plant.

THE *American Naturalist* appears from a new publishing house and in a new dress with its January number. The botanical department contains Schroeter's arrangement of the *Ustilagineæ* and *Uredineæ*, and the notice of a new tumble-weed from Nebraska (*Corispermum hyssopifolium*), besides the usual excellent *résumé* under "Botanical News."

MR. F. H. GILSON, of Reading, Mass., has begun the publication of a work entitled "Trees of Reading, Mass." Although the title is a local one, the very handsome plates, heliotypes from excellent photographs, make the work attractive to any botanist. Part I contains two elms, a sassafras, an oak and a birch, with appropriate text, and costs \$1.50.

THE UNIVERSITY OF KANSAS possesses a fine collection of the fossil flora of the Dakota rocks of the cretaceous. It contains upward of 200 species, nearly half of which are new. The new species have been described by Professor Leo Lesquereux. Duplicates of 75 of them are offered for sale, including 35 new species. Professor F. H. Snow, of Lawrence, Kansas, has the matter in charge.

THE *Italian Agricultural Stations' Journal*, begun in 1872 and discontinued in 1882, is to be revived under the editorial charge of Professor Pasquale Freda, of Rome. The prospectus gives promise of an agricultural-chemical journal valuable not only to Italians, but to foreigners as well. Six numbers will appear yearly, making a volume of at least 500 pages. The subscription in foreign countries is 15 francs.

MR. JAMES M. MACOUN will botanize next summer along the shores of James bay and the east coast of Hudson bay. As considerable difficulty is experienced in drying specimens, he only collects those required for the use of the Canadian Geological and Natural History Survey. He very kindly offers, however, to collect material for specialists working up any group of plants, and without any charge. He may be addressed at Ottawa, Canada.

THE FEBRUARY meeting of the botanical section of the Biological Society of Washington, D. C., presented the following programme: Notes on the Lake Superior flora, Dr. George Vasey; A visit to a fossil forest, Prof. F. H. Knowlton; Identification of fossil woods, Prof. Richard Foster; Variation of habit in *Ampelopsis*, Dr. C. V. Riley; New western *Uredineæ*, Mr. B. T. Galloway; Influence of cross-fertilization in the orange, Mr. C. L. Hopkins.

THE *Gardeners' Chronicle* (February 11) gives an illustration of *Psiadia rotundifolia*, a composite, styling it "the last of its race." It is a tree about twenty feet high, standing in a broad, open space near the entrance gates of the famous Longwood, St. Helena. It is actually the last living representative of the genus. It is a rare thing to see even the photograph of the last individual of a species. Kew has herbarium specimens, and has succeeded in germinating seed.

DR. M. MÖBIUS has recently published a paper in Pringsheim's *Jahrbücher*, also distributed separately, on the anatomical structure of orchid leaves as furnishing characters for classification. He finds that, as in the case of the leaves of grasses and conifers and the fruit of umbellifers, very helpful and often strongly diagnostic characters are to be found. He points out a practical application of such knowledge in determining rare and costly exotics which are not in flower.

THE ANNUAL REPORT on the flora of New York for the year 1885 by the state botanist, Mr. Chas. H. Peck, has been distributed. It covers 46 octavo pages, and is accompanied by two plates. The additions to the flora of the state number over two hundred, all but two being fungi, and thirty-seven of which are marked as new species. The Agaricinian species of *Pleurotus*, *Claudopus* and *Crepidotus* found in the state, numbering thirty-one in all, including two new species, are described in full, with notes.

PROF. WILLIAM TRELEASE has published his address before the Alumni Association of the St. Louis Medical College (January 18, 1888), on "Bacteria from a botanical stand-point," in the *Weekly Medical Review* for January 28 and February 4. It is an excellent presentation of a very difficult and commonly misunderstood subject before a class of students who must know something of it. Bacteriology is a tremendously exaggerated subject in the popular mind, and it is well occasionally to have the facts in the case plainly stated.

THERE HAS BEEN some uncertainty about the nutritive value of mushrooms. They are commonly ranked with meat, but a recent German writer states that it takes nine pounds of the common mushroom to equal a pound of beef. The matter has been investigated by Mr. E. F. Ladd (Rep. N. Y. Agric. Exp. Station, 1887, p. 464), who finds that mushrooms (*Agaricus campestris*) gathered from a pasture at Geneva, N. Y., contained 84½ per cent. of digestible albuminoids, and puff balls (*Lycoperdon giganteus*) from 70 to 80 per cent., according to maturity. He concludes that they compare favorably in nutritive value with meat.

BULLETIN No. 2 of the New York State Museum of Natural History (dated May, 1887), a pamphlet of 66 pages and 2 plates, by Chas. H. Peck, was distributed last month. It is mostly made up of a reprint of the revised report of the botanist for 1883, which, owing to legislative complications, was never properly published, with an additional article on the New York species of viscid Boleti. There are descriptions of 57 new species of fungi, and notes on nearly as many others. The first number of this series is not yet printed. It is little short of disgraceful that important printing undertaken by the state is subjected to such exasperating delays.

REV. THOMAS MORONG, in *Bulletin Torr. Bot. Club* (January), has begun a series of papers entitled "Studies in Typhaceæ." The present number considers Typha, and, after a very interesting description of its structure, the author gives a translation of Rohrbach's classification of the species, published about 1870. In this the 13 species are divided into two groups, the first containing those with fruit having a longitudinal furrow and bursting in water, and seed with a separable outer coat; the second contradicting these characters. Our three species (*T. latifolia*, *T. angustifolia*, and *T. Domingensis*, the last reported from Texas) belong to the first series.

THE SARRACENIA pitchers at Kew have begun to decay owing to the putrefying mass of insects they contain. In a note to the *Gardeners' Chronicle* (January 21), Mr. Watson suggests that the secretion found in the pitchers is not necessary to the destruction of the insects caught in them, as the enormous mass of bluebottles caught in the pitchers at Kew could not have been affected by the few drops of the secretion contained in each pitcher. He also suggests that the pitchers, by entrapping such immense numbers of insects, collect "a powerful stimulant to the roots of the plants when, by the decay of the pitchers, the contents are deposited on the ground directly above where the roots find nourishment."

THE FIRST FASCICLE of *Acta Horti Petropolitani* for 1887 is at hand, and contains the customary rich installment of contributions to the geographical distribution of phanerogams. Its 400 pages and eight plates present the following contributions: Herder on the Labiatæ, Plumbaginææ and Plantaginææ of the Raddean collection from Eastern Siberia (82 pp.); Winkler on 10 new Compositæ from Turkestan, 6 of which belong to Cousinia (12 pp.); Trautvetter on the flora of Dagestania (40 pp.); Otto Kuntze on the plants of Eastern Russia (128 pp.), in which are proposed a new genus of Umbelliferæ (*Schumannia*) and quite a number of new species; Regel on the species of *Allium* (138 species) in middle Asia, and the descriptions of some plants in the Imperial Garden at St. Petersburg (113 pp.).

THE INDIANA ACADEMY OF SCIENCE held its third annual meeting in Indianapolis December 28 and 29, 1887. Besides the presidential address by Professor John M. Coulter, upon "Evolution in the vegetable kingdom," the section of botany was represented by the following papers: A chemical study of *Juglans nigra*, and The value of organized work in plant chemistry, by Lillie J. Martin; The late drouth and its effect on vegetation, Companion plants, and Notes on the white-spored agarics of Franklin county (Ind.), by O. M. Meyncke; Histology of the foliage leaf of *Toxodium distichum*, by Stanley Coulter; Stomata of *Tillandsia usneoides*, by John M. Coulter; Additions to the flora of Indiana, by G. C. Hubbard; Characters in Umbelliferæ, by J. N. Rose; Lichens of Indiana, by Walter H. Evans; Life history of the plum leaf fungus, by J. C. Arthur.